

Figure 1:

Viscosity (SNU)

Temperature ( $^{\circ}\text{C}$ )

potato

100

90

80

70

60

50

40

100

80

60

40

20

Time (min)

700

600

500

400

300

200

100

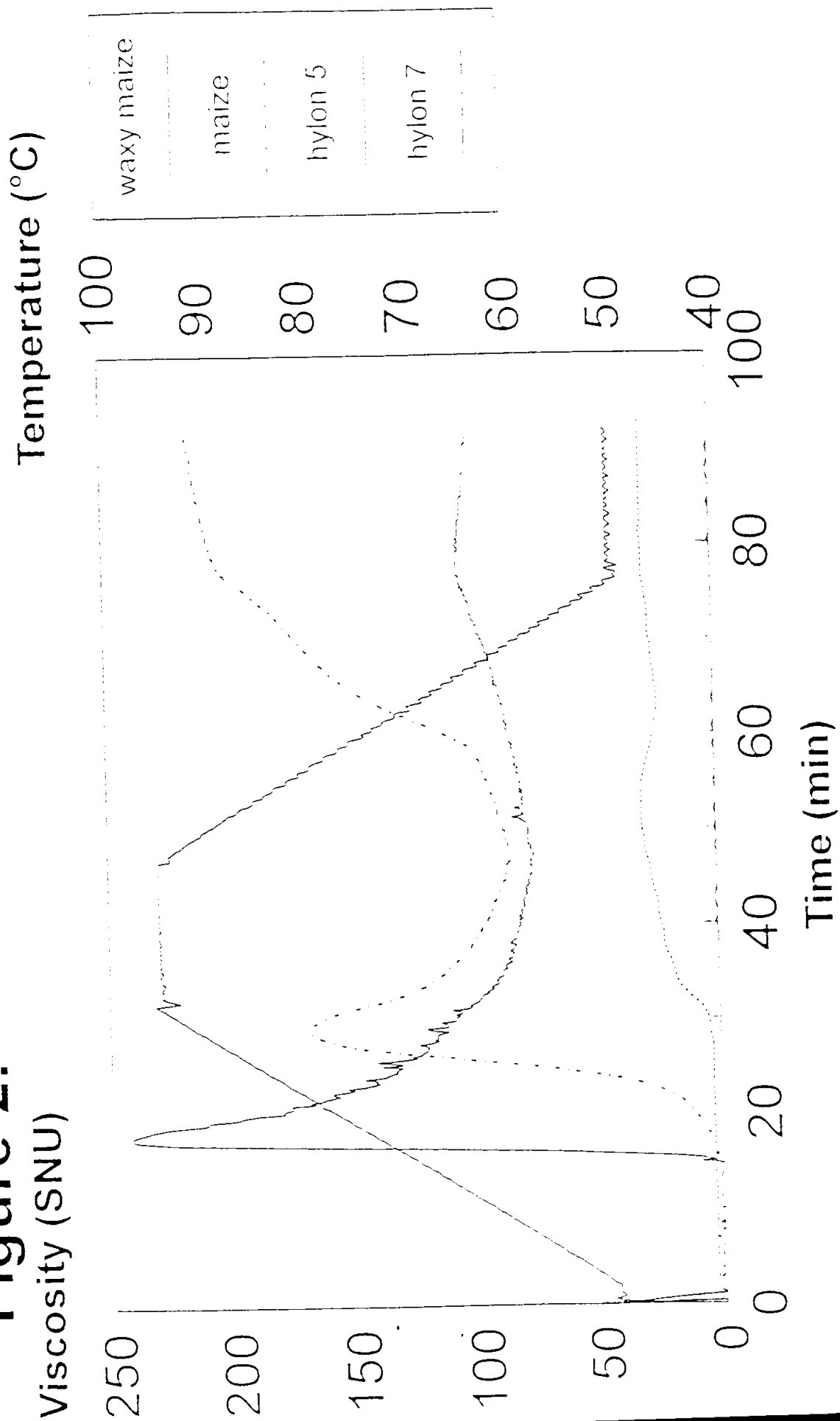
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$\beta$

A

*cancelled  
in favor*

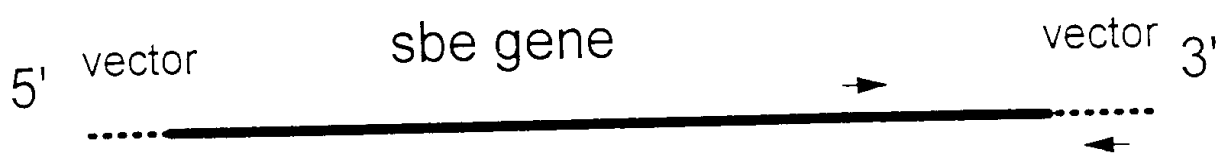
*of  
formal  
drawings  
paper #6*

**Figure 2:**

NH<sub>2</sub>

COOH

protein alignment  
design primer



PCR library

850 bp

screen library

1200 bp

1500 bp

RACE

190 bp

150 bp

450 bp

750 bp

1400 bp

[illegible][illegible]

knob	E	V	G	T	P	G	K	Y	K	V	A	I	D	S	D	A	I	V	F	G	G	H	G	R	V	G	H	D	V	D	H	I	J	S	P	I	G	-	P	G	V	P	E	I	H	F	H	R	P	H	S	F	K	V	I	S	P	S	B	I	C	V	A	Y	R	V
knob	E	V	G	T	P	G	K	Y	K	V	A	I	D	S	D	A	I	V	F	G	G	H	G	R	V	G	H	D	V	D	H	I	J	S	P	I	G	-	P	G	V	P	E	I	H	F	H	R	P	H	S	F	K	V	I	S	P	S	B	I	C	V	A	Y	R	V
knob	E	V	G	T	P	G	K	Y	K	V	A	I	D	S	D	A	I	V	F	G	G	H	G	R	V	G	H	D	V	D	H	I	J	S	P	I	G	-	P	G	V	P	E	I	H	F	H	R	P	H	S	F	K	V	I	S	P	S	B	I	C	V	A	Y	R	V
knob	E	V	G	T	P	G	K	Y	K	V	A	I	D	S	D	A	I	V	F	G	G	H	G	R	V	G	H	D	V	D	H	I	J	S	P	I	G	-	P	G	V	P	E	I	H	F	H	R	P	H	S	F	K	V	I	S	P	S	B	I	C	V	A	Y	R	V
knob	E	V	G	T	P	G	K	Y	K	V	A	I	D	S	D	A	I	V	F	G	G	H	G	R	V	G	H	D	V	D	H	I	J	S	P	I	G	-	P	G	V	P	E	I	H	F	H	R	P	H	S	F	K	V	I	S	P	S	B	I	C	V	A	Y	R	V
knob	E	V	G	T	P	G	K	Y	K	V	A	I	D	S	D	A	I	V	F	G	G	H	G	R	V	G	H	D	V	D	H	I	J	S	P	I	G	-	P	G	V	P	E	I	H	F	H	R	P	H	S	F	K	V	I	S	P	S	B	I	C	V	A	Y	R	V
knob	E	V	G	T	P	G	K	Y	K	V	A	I	D	S	D	A	I	V	F	G	G	H	G	R	V	G	H	D	V	D	H	I	J	S	P	I	G	-	P	G	V	P	E	I	H	F	H	R	P	H	S	F	K	V	I	S	P	S	B	I	C	V	A	Y	R	V
knob	E	V	G	T	P	G	K	Y	K	V	A	I	D	S	D	A	I	V	F	G	G	H	G	R	V	G	H	D	V	D	H	I	J	S	P	I	G	-	P	G	V	P	E	I	H	F	H	R	P	H	S	F	K	V	I	S	P	S	B	I	C	V	A	Y	R	V
knob	E	V	G	T	P	G	K	Y	K	V	A	I	D	S	D	A	I	V	F	G	G	H	G	R	V	G	H	D	V	D	H	I	J	S	P	I	G	-	P	G	V	P	E	I	H	F	H	R	P	H	S	F	K	V	I	S	P	S	B	I	C	V	A	Y	R	V
knob	E	V	G	T	P	G	K	Y	K	V	A	I	D	S	D	A	I	V	F	G	G	H	G	R	V	G	H	D	V	D	H	I	J	S	P	I	G	-	P	G	V	P	E	I	H	F	H	R	P	H	S	F	K	V	I	S	P	S	B	I	C	V	A	Y	R	V
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by G C T A I I L A A A I I L A I G G C A A I G A G I I G G C C A I E C I G A A I G A I I C A A G A

The image shows a vertical strip of a document page. The text is heavily distorted and appears as a repeating pattern of characters and symbols, possibly a barcode or a heavily degraded scan of a document. The visible characters include letters like 'A', 'C', 'U', 'T', 'K', 'G', 'B', 'P', 'L', 'M', 'N', 'O', 'Q', 'R', 'S', 'V', 'W', 'X', 'Y', 'Z' and various symbols like '!', '@', '#', '\$', '%', '&', '!', '@', '#', '\$', '%', '&', '!', '@', '#', '\$', '%', '&'. The pattern is dense and repetitive, suggesting a high-frequency signal or a corrupted scan of a document page.

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[illegible]

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1170

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250

King II

[illegible]

Ken.

1100

[illegible]

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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SSN :

[illegible]

ATATCAGCAAAAGGATGAGGAGATAGGATGATTTATTTGAAAAAGGAAACCTAGTTTGTCTTTAAATTTCACTGGACAAAAAGCTA  
 TATAGTGTTCCTACTTCTCTATCTCTATTAATTAACCTTTTCTCTTGGATCAAAAAAGAGAAATTAAGAGCTGTCTTTTTCGATA 2520  
 I S R K D E G D R K I V F E K G N L V F V F N F H W T K S Y

CAGACATACGCAACGGGCGGAGGCGGAAAAATACAGGGTGGCTTGGACTCAGATGATCGACTTTTGGTGGCTTGGGAGAAAT  
 AGTCGATACGCGTACGGATGGACTTGGGACCTTTTATCTTCCCAACGGAACCTGAGTCTACTAGGTGAAAAACCCACGGAAGCCCTCTTAA 2610  
 S D Y R : A C L K P G K Y K V A L D S D C P L F G G F G R I

SSD :

*[The page contains faint, illegible markings and bleed-through from the reverse side.]*

[illegible]

SS :

[illegible]

Cl<sub>2</sub> :

[illegible]

(5)

A horizontal number line is shown, ranging from -10 to 10. The line has tick marks at every integer. The numbers are written below the line: -10, -9, -8, -7, -6, -5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. A red dot is placed on the tick mark for the number -4.

↙180 ↙190 ↙200 ↙210 ↙220  
 IYEIDPLLTNYRQ-LDYRYSQYKKLREAIDKYEGGLEAFSRGYEKMGTFR  
 : : : DP L L Y : H : R : Y : : : KYEG LE L F : GY K L G F R  
 LLNLOPTLEPYLCHFRHRMKRYVDOCKMLTEKYEGPLEEFAGGYLKFGFNR  
 ^100 ^110 ^120 ^130 ^140  
 ↙230 ↙240 ↙250 ↙260 ↙270  
 SATG:ITYREWALGACSAAL:IGDFNNWDANAD:IMTRNEFGVWE:FLPNNV  
 : : : L YREWA : AG A : : IGDFN W : : : M : : : FGVW : : : P : VD  
 EOGC:LYREWAPAGEAEV:IGDFNGWNGSNHMMEKDQFGVWS:RIPD-VD  
 ^150 ^160 ^170 ^180 ^190  
 ↙280 ↙290 ↙300 ↙310 ↙320  
 GSPAIPHGSRVKIRMDTFPSGV-KDS:PAWINYSLQLPDEI--PYNGIHYD  
 : : P : IPH SRVK:R : : GV D : PAWI:Y : : : : PY:G: : D  
 SKPV:IPHNSRVKFRFKHNGVWVDRI:PAWIKYATADATKFAAPYDGYWYD  
 ^200 ^210 ^220 ^230 ^240  
 ↙330 ↙340 ↙350 ↙360 ↙370  
 PPEEERYIFQHPRPKPKSLRIYESH:GMSSPEPKINSYVNFRDEVLPRI  
 PP : ERY F : : PRP KP: : RIYE: H: GMSS: EP: : NSY : F D: VLPRI  
 PPPSERYHFKEYPRPKPRAPRIYEAHVGMSSSEPRVNSYREFADDEVLPRI  
 ^250 ^260 ^270 ^280 ^290  
 ↙380 ↙390 ↙400 ↙410 ↙420  
 KKLGYNALQ:MA:ICEHSYYASFGEYHVTNFFAPSSRFGTDDDLKSLIDKAH  
 K : : YN: : Q: MA: EHSYY: SFGYHVTNFFA S: R: G: P: DLK LIDKAH  
 KANNYNTVQLMA:IMEHSYYGSFGEYHVTNFFAVSNRYGNPEDLKYLIDKAH  
 ^300 ^310 ^320 ^330 ^340  
 ↙430 ↙440 ↙450 ↙460 ↙470  
 ELG:VVLMD:VHSHASNNTDGLNMFDC---TDSCYFHSGARGYHWMWDS  
 : LG: VL: D: VHSHASN DGLN FD : : : YFH: G: RGYH : WDS  
 SLGLQVLVDVHSHASNNTDGLNMGFD:GGGSQESYFHAGERGYHKLWDS  
 ^350 ^360 ^370 ^380 ^390  
 ↙480 ↙490 ↙500 ↙510 ↙520  
 RLFN:YGNWEVLR:YLLSNARWWLDAFKFDGFRFDGVTSMYIHHGLSYGFT  
 RLFN:Y: NWEVLR: LLSN RWWL: : : FDGFRFDG: TSM: Y: HHG: : : GFT  
 RLFN:YANWEVLPFLLSNLRWWLEEYNFDGFRFDG:TSMLYVHHG:INMGFT  
 ^400 ^410 ^420 ^430 ^440  
 ↙530 ↙540 ↙550 ↙560 ↙570  
 GNYEEYFGLATDVCAYVYLMMLVNOLIHGLFPDA:IGEDVSGMPTFC:PV  
 GNY: EYF: ATDVCAYVYLMMLN: L: H : FPDAL: : EDVSGMP: : PV  
 GNYEEYFGEATDVCAYVYLMMLANXLIHKIFPDATVIAEDVSGMPGLSRPV  
 ^450 ^460 ^470 ^480 ^490  
 ↙580 ↙590 ↙600 ↙610 ↙620  
 GEGG:VGFYPL:YML:ADKPIELK-KRDEEDWR:GD:V-TLTPRWSEKOT  
 GEGG:VGFYPL:YML:ADK: : : LK K: CEDW: : : : TLTPRWSEKOT  
 GEGG:VGFYPL:YML:ADK:WIDLYNKNDECDAS:YK:VTS63LTNPRWTEKOT  
 ^500 ^510 ^520 ^530 ^540



630 640 650 660 670  
 SYAESHDGALVGDKTIAFWLMCKCMYDFMALDRPSTSLIDRGIALHKMIR  
 :YAESHDG::VGDKTIAF LMDK:MY M: ::::DRGIALHKMIR  
 AYAESHDGS:VGDKTIAFLLMDCKEMYSGMSCLTDASPVVDRGIALHKMIH  
 660 660 670 680 690  
 680 690 700 710 720  
 LVTMGLGGEGYLNFMGNEFGHPEWIDFPRAEQHLSOGSVIPGNCFSYDKC  
 : TM: LGGEGYLNFMGNEFGHPEWIDFPR GN: SYDKC  
 FFTMALGGEGYLNFMGNEFGHPEWIDFPR-----EGNNWSYDKC  
 600 610 620 630  
 730 740 750 760 770  
 RRRFDLGDAEYLRYRGLCEFDPRMQYLEDKYEFMTSEHCFISRKDEGDRM  
 RR::L:D:E.LRY:::FDR:M:L::K::F::S::C::S::D:::::  
 RRQWNLADSEHLRYKFMNAFDRAMNSLDEKFSFLASGKQIVSSMDDDNKV  
 640 650 660 670 680  
 780 790 800 810 820  
 IVFEKGNLVFVFNFWTKSYSDYRIACLKPGKYKVALDSDDPLFGGFGRI  
 :VFE:G:LVFVFNFW:::Y::Y:::C PGKY:VAL:SD: FGG GR  
 VVFERGDLVFVFNFWHPNNTYEGYKVGCDLPGKYRVALGSDAWFEGGHGRA  
 690 700 710 720 730  
 830 840 850 860  
 DHNAEYFT-----FEGWYDDRPRSIMVYAPCKTAVVYALVDKEEEEE  
 :H:::FT E:::RP:S::V:P:T V.Y VD: E.  
 GHDVDHFTSPEGIPGVPETNFNGRPNSEKVLSPARTCVAYYRVDERMSET  
 740 750 760 770 780  
 870  
 EEEEEEV  
 E::::  
 EGYQTD:  
 790

Fig. 6 (con)



450 460 470 480 490  
 LNYFDCCTGSCYF-SGARGYHWMWDSRLFNYSNWEVLRYL LLSNARWWLCAF  
 LNYFDCCTGSCYF-SGARGYHWMWDSRLFNYSNWEVLRYL LLSNARWWLCAF  
 LNYFDCCTGSCYF-SGARGYHWMWDSRLFNYSNWEVLRYL LLSNARWWLCAF  
 440 460 480 470 480  
 500 510 520 530 540  
 KFDGGRFDGVTSMXYLHHGLS/GFTGNYYEYFGLATDWDVAVVYLYLVNDL  
 KFDGGRFDGVTSMXYLHHGLS/GFTGNYYEYFGLATDWDVAVVYLYLVNDL  
 KFDGGRFDGVTSMXYLHHGLS/GFTGNYYEYFGLATDWDVAVVYLYLVNDL  
 490 500 510 520 530  
 550 560 570 580 590  
 IHGLFPCA:ITIGEDVSGMPTFC:PVQEGGVGFQYRLHMA:ADKRIELLKK  
 IHGLFPCA:ITIGEDVSGMPTFC:PVQEGGVGFQYRLHMA:ADKRIELLKK  
 IHGLFPCA:ITIGEDVSGMPTFC:PVQEGGVGFQYRLHMA:ADKRIELLKK  
 540 550 560 570 580  
 600 610 620 630 640  
 RCEDWRVGD:IVHTLTNRRWSEKCVSYAESHDQALVGDKT:IAFWLMCKDMY  
 RCEDWRVGD:IVHTLTNRRWSEKCVSYAESHDQALVGDKT:IAFWLMCKDMY  
 RCEDWRVGD:IVHTLTNRRWSEKCVSYAESHDQALVGDKT:IAFWLMCKDMY  
 590 600 610 620 630  
 650 660 670 680 690  
 DFMALDRPSTSL:IDRG:ALHKMIRLVMTGLGGEGYLNFMGNEFGHPWID  
 DFMALDRPSTSL:IDRG:ALHKMIRLVMTGLGGEGYLNFMGNEFGHPWID  
 DFMALDRPSTSL:IDRG:ALHKMIRLVMTGLGGEGYLNFMGNEFGHPWID  
 640 650 660 670 680  
 700 710 720 730 740  
 FPRAECHLSGSGV:PGNCF:SYDKORRRFDLGD:AEYLRYRGLGEFDRPMQY  
 FPRAECHLSGSGV:PGNCF:SYDKORRRFDLGD:AEYLRYRGLGEFDRPMQY  
 FPRAECHLSGSGV:PGNCF:SYDKORRRFDLGD:AEYLRYRGLGEFDRPMQY  
 690 700 710 720 730  
 750 760 770 780 790  
 LECKYEFMTSEHC:ISRKDEGDRY:VFEKGNLVFVFNFWTKSYSCYR:IA  
 LECKYEFMTSEHC:ISRKDEGDRY:VFEKGNLVFVFNFWTKSYSCYR:IA  
 LECKYEFMTSEHC:ISRKDEGDRY:VFEKGNLVFVFNFWTKSYSCYR:IA  
 740 750 760 770 780  
 800 810 820 830 840  
 CLKPGKYYK:VALDSDDPLFGGGR:IDHNAEYFT:EGWYODRPPRS:YAPC  
 CLKPGKYYK:VALDSDDPLFGGGR:IDHNAEYFT:EGWYODRPPRS:YAPC  
 CLKPGKYYK:VALDSDDPLFGGGR:IDHNAEYFT:EGWYODRPPRS:YAPC  
 790 800 810 820 830  
 850 860 870  
 880 890 900



[illegible]

[illegible]

2795 **CTTGGTCAT** **G**ACATAGAGCTTCCTTGAC**-----AT**CAGTCTTGGCGGAAT**TC**CATGTGACAA**G**AAGGTTGGAC**TCAG**GATATATAGCTTCTTCCACATATAGTAG**TCAG**GATATATAGCTTcon, seq  
 2827 **CT**ACATAGAGCTTCCTTGACGATCTGGCAATATTCATCAGTCAAGTCTTGGCGGAATTCATGTGACAG**G**-AAGGTTGGCAATCTTCCACATATAGTAGTAGTCCAA**G**GATATATAGCTTcon, seq  
 2834 **CT**ACATAGAGCTTCCTTGACGATCTGGCAATATTCATCAGTCAAGTCTTGGCGGAATTCATGTGACAA**G**AAGGTTGGCAATCTTCCACATATAGTAGTAGTCCAA**G**GATATATAGCTTcon, seq  
 2895 **CT**ACATAGAGCTTCCTTGACGATCTGGCAATATTCATCAGTCAAGTCTTGGCGGAATTCATGTGACAA**G**AAGGTTGGCAATCTTCCACATATAGTAGTAGTCCAA**G**GATATATAGCTTcon, seq  
 2898 AGAGATGAAGTCTGAACAAA--CATATGTAAMATCGATGAATTTAIGTCGAATGCTGGGACGATCGAATTCCTGGCAGCC  
 2937 AGAGATGAAGTCTGAACAAA--CATATGTAAMATCGATGAATTTAIGTCGAATGCTGGGACGATCGAATTCCTGGCAG  
 2924 AGAGATGAAGTCTGAACAAA**AA**CATATGTAAMATCGATGAATTTAIGTCGAATGCTGGGACGATCGAATTCCTGGCAGCC  
 3005 AGAGATGAAGTCTGAACAAA--CATATGTAAMATCGATGAATTTAIGTCGAATGCTGGGAC**CCGGTT**CAG**ACCTTTTGCTTAGTGAGTTCGTGTAATTTGTCATCTCTTTANATGTACA**psbe2con, seq  
 2975  
 3012  
 3003  
 3123 **GCCCACTAGAAATCAATTATGTGAGACCTAATAAACCAATACCATAAATGGAAATAGTGCTGATCTAATGATGTTTTAANCCNNNAAAAAATACTCGAC**psbe2con, seq  
 11con, seq  
 19con, seq  
 10con, seq  
 psbe2con, seq

Bgl II

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 CTTACGATTACAAAGATAAAGAACTTTTCTGAGAGAAAAGTGGCTTTAGAAACGACTTTACAGAAATTTAAAGGCTTAGGGCTGG  
 A N V S V F L K K H S L S R K I L A E K S S V N S E S R P 90  
 TTTACAGTTGCAGCATCGGGGAAAAGTCTTCTGCTGCTGAAATTCGACAGACCAATTTGAGTTCACTGA  
 AAGATCTCAACGCTCTAGGCTTTTTCAGGAACACGGACCTTGGGTCTCACTATCGAGGAGTAGGAGTTGTCTGCTTAAACTCAAGTCACT  
 S T V A A S G K V L V P G C C S S S S S S T C C P E F T E 180  
 GACATCTCCAGAAAATTCGGCAGCATCAACTGATGTAGATAGTTCAACAAATGGAACACGGCTAGGCGAGATAAAACTGAGAAGCATGACGT  
 CTGTAGAGGTCTTTAAAGGGTCTGAGTGAATACATCTATCAAGTGTGTTACCTTGTGCGATCGGTCTAATTTGACTCTTGTACTGCA  
 T S P E N S P A S T C V C S S T M E H A S C I K T E N D D V 270  
 TGAGCGTCAAGTGAATTTACAGGAAGTGTGGAAGAGCTGGATTTTCTTCATCACTACAACCTACAAGAAGTGGTAAACTGGAGGAGTC  
 ACTCGGCGAGTCACTAGAAATGCTCTCACAACCTCTCGACCTAAAAACGAAGTAGTGATGTTGATGTTCTTCCACCATTTGACCTCTCTAG  
 E P S S D L T G S V E E L D F A S S L Q L Q E G G K L E E S 360  
 TAAAAACATTAATCTCTGGAAGAGACAATTAATGATGAATCTGATAGGATCAGAGAGAGGGGCAATCCCTCCACCTGGACTTGGTCAGAA  
 ATTTGTAAATTTATGAAGACTTCTCTGTAATAACTACTTAGACTATCCTAGTCTCTCTCTCCCGTAGGGAGGTGGACCTGAACCACTCTT  
 K T L N T S E E T I I D E S D R I R E R G I P P P G L G G K 450  
 Hinc II  
 GATTTATGAAATAGACCCCCCTTTGACAAAATATGCTCAACACCTTGATTACAGGTATTCACAGTACAAGAAACTGAGGGAGGGCAATTGA  
 CTAATAGCTTTATCTGGGGGAAAACTGTTTGATAGCAGTGTGGAAGTAAATGTCCATAAGTGTGATGTTCTTTGACTCCCTCCGTTAACT  
 I Y E I D P L L T N Y R Q H L D Y R Y S Q Y K K L R E A I D 540  
 Hinc III  
 CAAGTATGAGGGTGGTTTGAAAGCTTTTCTGCTGGTTATGAAAAAATGGGTTCACCTGCTAGTGTCTACAGGTATCACTTACCGTGAGTG  
 GTTCATACTCCCAACAAAACCTTGGAAAAAGAGCACCAATACCTTTTACCCAAAAGTGAGCATCAAGATGTCCATAGTGAATGGCACTCAC  
 K Y E G G L E A F S R G Y E K M G F T R S A T G I T Y R E W 630  
 Pvu II  
 GGTCTTGGTCCCGAGTCAGCTGCGCTGATTGGAGATTTCAACAAATGGGACCGAAAATGCTGACATTTAGACTCGGAATGAATTTGGTGT  
 CCGAGGACCAAGGCTGAGTGGAGGGAGTAAGCTCTAAAGTTGTAAGCTGCGTTACGAGTGTAACTAGCGCTTACTTAACTGACA  
 A P G A C S A A L I G D F N N W D A N A C I M T R N E F G V 720  
 CTGGGAGATTTTCTGCGAAATAATGTGATGCTTCTGCAATTTCTGATGGGTCCAGAGTGAAGATACGATGGAACCTGCACTGAGG  
 GACCTCTAAAAAGAGGGTTTATTACCTTACCAAGAGGAGCTTAAAGAGTACCGAGGTCTCACTCTATGCTTACCTGTGAGGTAGTCC  
 A E I F L P N N V D G S P A I P H S S P V K I P M C T P S G 810  
 TGTAAAGATTTCAATTTCTGCTGATCAACTACTCTTTACAGCTTCTGATGAAATTTGATATTAATGGAATATTTATGATCAACCGCA  
 AATTTCTTAAAGTAAAGAGCACTTCTGATGAGAAATCTGAAAGCACTTCTTAAAGTATTTACCTTATTAATACTAGGTGGCT  
 A A D S I P A K I N Y S L Q L P D E I P Y N G I Y K D P P E 900  
 AAGGAGAGCTATTTCTGAAACACCAAGGCTTAAAGGAAACCAAGTGGTGAATATATGAATCTATATTTGAAATGAGTATTCGGA  
 TGGCTCTGATATAGGAAGCTTGTGGTGGGGTTTCTTGGTTTCAAGAGCTCTTATTTTAAAGTATTAAGCTTACTATCTAGGGCT  
 R E P Y T P D H P P P K K P Y S L P I Y E S H I G M S S P E 990



Xmn I

GCCTAAATTAACGATACGTAATTTAGAGATGAAGTTCTCTGCGCATAAAAAASCTGGGTACAAAGCGGTGCATAATATGGGTAT  
CGGATTTAATTGAGTATGCACCTAAAAATCTCTACTCAAGAAGGAGCGTATTTTSGAACCCATCTTACCCGAGGTTTAAATACCGATA  
P K L N S Y V N F R D E V L P R I K Q L G Y N A V Q I M A I  
TGAAGAGCATTTTATATGCTAGTTTGGTTATCATGTACAAAAATTTTGCACCAAGCAGCGGTCTTGGAAAGCGCCGAGCGACCTTAA  
AGTTCTCTAAGAATAATACGATCAAAACCAATAGTACATGTTTAAAAAACGTGGTTCTCGGCAAAACCTTGGCGGTCTCTGGAAT  
G E H G Y V A S F G Y H T N F F A P S S R F G T P D C L K  
GCTTTGATTGATAAAGCTCATGAGCTAGGAAATGTTCTCTCATGGACATTTCTCAGAGCGATGCATCAAAATATCTTTAGATGGACT  
CAGAAATTAATATTTGAGTACTCGATCTTAAACAACAAGAGTACCTGTAAACAAGTGTGGTACCTAGTTTATTATGAAATCTACCTGA  
S L I O K A H E L G I V V L M D I V H S H A S N N T L O G L  
1080  
1170  
1260

Sac I

GAAGATGTTTACGGGCACAGATAGTTGTACTTTCACTCTGGAGCTCTGGTTATCATGGATGTTGGGATTTCCGCGCTCTTTAACTATGG  
CTGTACAAAAGTGGCGTGTCTATCAACAATGAAAGTGAGACCTCGAGCGACCAATAGTAACCTACACCTTAAGGGCGGAGAAATTGATACC  
N M F D G T D S C Y F H S G A R G Y H W M W D S R L F N Y G  
AAACTGGGAGGTACTTAGGTATCTCTCTCAAAATGCGAGATGGTGGTTGGATGAGTTCAAAATTTGATGGATTTAGATTGATGGTGTGAC  
TTTGACCCCTCCATGAATGCAATAGAAGAGAGTTTACGCTCTACCCACCAACCTACTCAAGTTTAAACTACCTAAATCTAAACTACCCACTG  
N W E V L R Y L L S N A R W W L D E F K F D G F R F D G V T  
ATCAATGATGTATACTCACCACCGATTATGGGTGGGATTCAGTGGGAAGTACGAGGAATACTTTGGACTGGCAACTGATGTGGATGCTGT  
TAGTTACTACATATGAGTGGTGCCTAATAGCCACCCCTAAGTGACCTTTGATGCTCTTATGAAACCTGAGCGTTGACTACACCTACCGACA  
S M M Y T H H G L S V G F T G N Y E E Y F G L A T D V D A V  
1350  
1440  
1530

Hinc II

TGTATCTGATGGTGGTCAACGATCTTATTTACGGGCTTTTCCGAGATGCAATTAACATTGGTGAAGATGTTACCGGAAATGCCGACATT  
ACACATAGACTACGACCGAGTTGCTAGAATAAGTGCCTGAAAAAGGTTCTACGTTAATGGTAACCACTCTTACAATCGCCTTACCGCTGTAA  
V Y L M L V N D L I H G L F P D A I R I G E D V S G M P T F  
1620

Nde I

TTGATTTCCCGTTCAAGATGGGGGTGTTGGCTTTGACTATCGGCTGCATATGGCAATTTGCTGATAAAAGGATTTGATGAGTTGCTCAAGAAAGG  
AACATAAGGGGCAAGTTCTTACCCCGACAAACCGAAAGTGATAGCGGAGGTATACCTTAAACGACTATTTACCTAACTCAACGAGTTCTTTGC  
E D F V Q D G S Y G F D Y R L H M A I A D K W I E L L K K R  
GGATGAGGATTTGAGAGTGGGTGATATTTGCTATACATGACAAAAAGAGATGGTGGGAAAAAGTGTGTTTCAATCCCTGAAAGTCTATGA  
CTACTCTTAACTCTTACCCCACTATAACAGATATGTACTGTTTATCTTACCCAGGCTTTTACACAAAAAGTATGCGACTTTTCACTACT  
D E D W R V G D I Y H T L T N R R W S E K C V S C A E S H C  
1710  
1800

Hinc I

TCTGCTTATAGTGGGTGATAAAAAATATAGATCTGCGCTGATGCACAAAGGATATGATGATTTTATCGGCTCTGATAGACCTGCAACATG  
ATCTTACATGACCTTATATTTGATATCTTACGACAGGACTACCTGTTCTCTATACATCTTAAATACCGAGACCTATCTGCGAGTTGTTAG  
D P L V G D K T I A F A L M D I E M Y D F M A L D R R E T S  
1890

Asp III  
Kpn I

CTTAATGATTTGATAGCAATTTGACATAGCTGATTTAGCTTTTAACTATGGGATTTAGGAGGAGAAAGGTAATTTAAATTTGATGGGAAAT  
TAACTATGATGACCTTATCTTACCTGTTTCTTACCTGATTTGATACCTGATTTCTGCTCTTTTAAATGGAATTTAAAGTACCTTT  
K D F D I A L H K M I F L Y T M G L G G E G Y L N F M G N  
1980

2010

TGA AAT GCATACGGAGATTTGACCTGGAGATCCAGAAATTTAAGATACCATGGGTGCAAGAAATTTACCGGGGCTATGCATATGCT  
 ACTATTTACGCTGGCTCTAAACTGGACCTCTACGCTCTATAAATTCTATGGTACCCAACTCTCTAAACTGGCCCGATACGCTATAGA  
 O K C R R R F D L G D A E Y L R Y H G L O S F D R A M C Y L

T C A G A T A A A T T G A G T T A T G C T T C A G A A C A C C A G T T C A T A C A C G A A A G G A T G A A G G A G A T A G G A T G A T G T A T T G A A A A G G A A A  
 A C T T C A T T T A A C T C A A A T A C T G A A G T C T T G T G G G T C A A G T A T A G T G C T T T C C A C T T C C T C A T C C T A C A C A T A A A C T T T T C T C T T  
 E C K K E F M S E H Q F S R K C E G C R M I V F E O G N

2250

C C A G T T T G C T T T A A T T C A C T G G A C A A A T A C C T A T C A G A C T A T G C C A T A G G C T G C C T G A A G C C T G G A A A A T A C A A G G T T G G C T T  
 G G A T C A A A A A C A G A A A T T A A A A G T G A C C T G T T A T C A T A A C T C T G A T A G G C A T A T C C G A C G G A C T T C G G A C C T T T T A T G T T C C A A C G G A A  
 L V F V F N F H W F N S Y S D Y R I G C L K P G K Y K V G L

2340

GGACCTCAGATGATCCACCTTTGGGGGCTTGGGAGGATGATCATTAAGCCGAAATTCACCTCTGAGGATGATATGATGATCGACCT  
CTGTGATCTATCTGGGTGAAAAACCATCGGAGCCCTCTTAACTAGCTTTTCGGGCTTATTAAGAGGGAGACCTCTTCACATACCTCTGCGGGG 2450  
C S C C P T P G E F G R I D H N A E Y P T S E G S Y D C R P

[illegible]

NGAAGAA-----  
 -----> 253'  
 AGTTCTAAAA  
 T T T

Fig. 9 (con)

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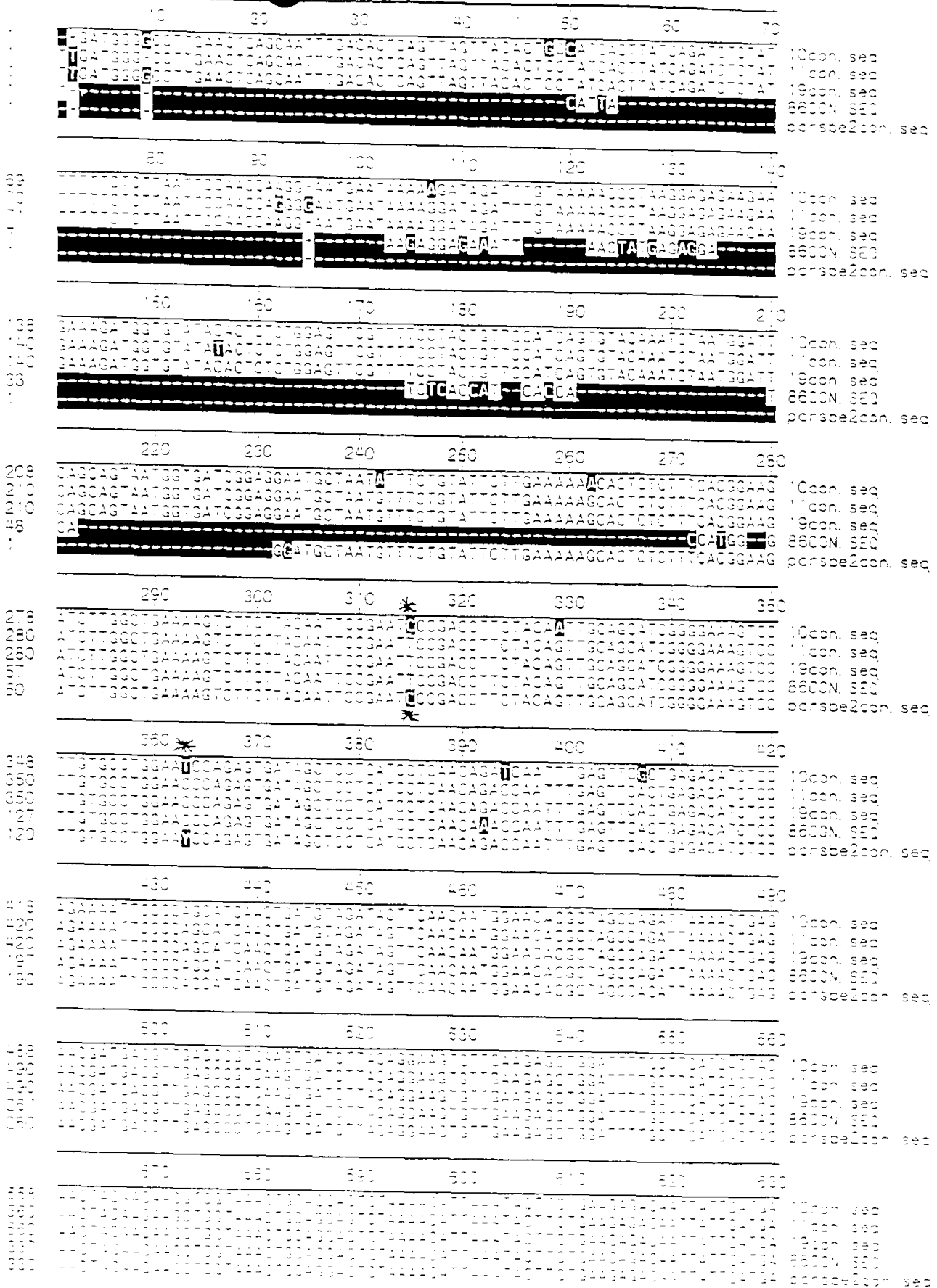


Fig. 10 19/31







	2530	2540	2550	2560	2570	2580	2590	
10con. seq								
11con. seq								
19con. seq								
86CON. SEQ								
parspe2con. seq								
	2600	2610	2620	2630	2640	2650	2660	
10con. seq								
11con. seq								
19con. seq								
86CON. SEQ								
parspe2con. seq								
	2670	2680	2690	2700	2710	2720	2730	
10con. seq								
11con. seq								
19con. seq								
86CON. SEQ								
parspe2con. seq								
	2740	2750	2760	2770	2780	2790	2800	
10con. seq								
11con. seq								
19con. seq								
86CON. SEQ								
parspe2con. seq								
	2810	2820	2830	2840	2850	2860	2870	
10con. seq								
11con. seq								
19con. seq								
86CON. SEQ								
parspe2con. seq								
	2880	2890	2900	2910	2920	2930	2940	
10con. seq								
11con. seq								
19con. seq								
86CON. SEQ								
parspe2con. seq								
	2950	2960	2970	2980	2990	3000	3010	
10con. seq								
11con. seq								
19con. seq								
86CON. SEQ								
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	3020	3030						
10con. seq								
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86CON. SEQ								
parspe2con. seq								

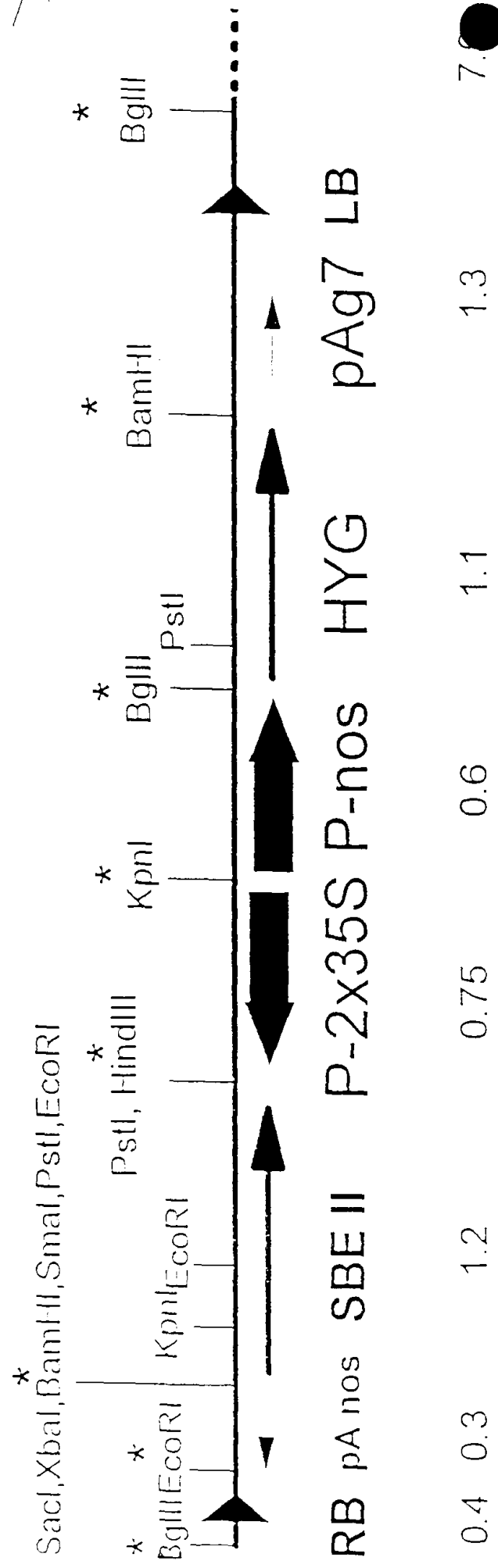


Fig. 11



Nco I  
BstX I

TCATTAAAGAGGAGAGAAATTAACATGAGAGGATCTCACCATCACCATCACCATGGGATCT  
AGTAAATTTCTCTCTTTAATGATACCTCTCTAGAGTGGTAGTGGTAGTGGTACCCCTAGA 60  
M R G S H T T H T G I

EcoR I

TGGCTGAAAAAGTCTTCTTACAAATTCGGAAATTCGGACCTTCTACAGTTGCAGCATCGGGGA  
ACCGACTTTCAGAGAAGATGTTAAGGCTTAAGGCTGGAAGATGTCAACGTCTGTAGCCCTCT 120  
L A E K S S Y N S E F R P S T V A A S G

AAGTCCTTGTGCCTGGAACCCAGAGTGATAGCTCCTCATCTCTCAACAAACCAATTTGAGT  
TTCAGGAACACGGACCTTGGGTCTCACTATCGAGGAGTAGGAGTTGTTTGGTTAAACTCA 180  
K V L V P G T C S C S S S S S T N C F E

TCACTGAGACATCTCCAGAAAAATTCCTCCAGCATCAACTGATGTAGATAGTTCAACAATGG  
AGTGACTCTGTAGAGGTCTTTTAAGGGGTCTGTAGTTGACTACATCTATCAAGTTGTTACC 240  
F T E T S P E N S P A S T D V D S S T M

AACACGCTAGCCAGATTAAAACGAGAACGATGACGTTGAGCCGTCAAGTGATCTTACAG  
TTGTGCGATCGGTCTAATTTGACTCTTGTCTACTGCAACTCGGCAGTTCACTAGAATGTC 300  
E H A S C I K T E N D D V E P S S D L T

GAAGTGTGAAGAGCTGGATTTTGCTTCATCACTACAACTACAAGAAGGTGGTAAACTGG  
CTTCACAACTTCTCGACCTAAAACGAAGTAGTGATGTTGATGTTCTTCCACCATTTGACC 360  
G S V E E L D F A S S L C L C E G G K L

AGGATCTTAAAACATTAATTAATCTGTGAAGAGACAAATTAATGATGAATCTGATAGGATCA  
TCTTCAGATTTTGAATTTTGAAGACTCTCTGTTAATAACTACTAGACTATCTTAGT 420  
E E S K T L N T S E E T I I D E S D R I

GAGAGAGGGGGCATCCCTCCACCTGGACTTGGTCAGAGAGATTTATGAAATAGACCCCTCTT  
CTCTCTCCCTGTAGGGAGGTGGACCTGAAACAGTCTTCTAATTAATTTCTGGGGGAAA 480  
R E P G I P P P G L G C K I Y E I D P L

Hinc II

TCGACAAAACATATCGTCAACACCTTGATTACAGGTATTCACAGTACAAGAAACTGAGGGAGG  
ACTGTTTGATAGCAGTTGTGGAACTAATGTCCATAAGTGTGTCATGTTCTTTGACTCCCTCC  
L T N Y R C H L D Y R Y S C Y K K L R E 540

HinD III

CAATTGACAAGTATGAGGGTGGTTTGGAAAGCTTTTCTCGTGGTTATGAAAAAATGGGTT  
GTTAACTGTTTCATACTCCCAACCAAAACCTTCGAAAAAGAGCACCAATACTTTTTTACCCAA  
A I D K Y E G G L E A F S R G Y E K M G 600

Pvu II

TCACTCGTAGTGCTACAGGTATCACTTACCGTGAGTGGGCTCCTGGTGCCCCAGTCAGCTG  
AGTGAGCATCACGATGTCCATAGTGAATGGCACTCACCCGAGGACCACGGGTGAGTCGAC  
F T R S A T G I T Y R E W A P G A G S A 660

CCCTCATTGGAGATTTCAACAATTGGGACGCAAATGCTGACATTATGACTCGGAATGAAT  
GGGAGTAACCTCTAAAGTTGTTAACCCCTGCGTTTACGACTGTAATACTGAGCCTTACTTA  
A L I G D F N N W D A N A D I M T R N E 720

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AACCACAGACCCCTCTAAAAAGACGGTTTATTACACCTACCAAGAGGACGTTAAGGAGTAC  
F G V W E I F L P N N V D G S P A I P H 780

SnaB I

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CCAGGTCTCACTTCTATGCATACCTGTGAGGTAGTCCACAATTCTTAAGGTAAGGACGAA  
G S R V K I R M D T P S G V K C S I P A 840

GGATCAACATACCTTCACAGCTTCTGATGAAATTCATATATAATGGAATATATTATGATC  
CCTAGTTGATGAGGAGGTGTGGAAGGACTACTTTAAGGTATATTACCTTATATATATCTAG  
W I N Y S S G L P D E I P Y N G I Y Y C 900

CACCCGAAAGAGGAGAGGTATATCTTCAACACCCACGGGCCAAAGAAACCAAGTCTCTGA  
GTGGGCTTCTCTCTCTCATATAGGAGGTGTGGGTGCGCGTCTCTCTCTCTCTCTCTCTCT  
P P E E E P Y I F C H P R P K K P K S L 960

GAATATATGAATCTCATATTGGAATGAGTAGTCCGGAGCCTAAAAATTAAGTCATACGTGA  
 CTATATACTTAGAGTATAACCTTACTCATCAGGCCTCGGATTTTAATTGAGTATGCACCT 1020  
 R I Y E S H I G M S S P E P K I N S Y V

Xmn I

HinD III

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 TAAAAATCTCTACTTCAAGAAGGAGCGTATTTTTTCGAACCCATGTTACGCCACGTTTAAAT 1060  
 N F R D E V L P R I K K L G Y N A V C I

TGGGTATTCAAGAGCATTCTTATTATGCTAGTTTTGGTTATCATGTCACAAATTTTTTTG  
 ACCGATAAGTTCTCGTAAGAATAATACGATCAAAACCAATAGTACAGTGTAAAAAATAC 1140  
 M A I C E H S Y Y A S F G Y H V T N F F

CACCAAGCAGCCGTTTTGGAACGCCCGACGACCTTAAGTCTTTGATTGATAAAGCTCATG  
 GTGGTTCTGTCGGCAAAACCTTGCGGCTGCTGGAATTCAGAACTAACTATTTTCGAGTAC 1200  
 A P S S R F G T P D D L K S L I D K A H

Nsi I

AGCTAGGAATTGTTGTCTCATGGACATTGTTACAGCCATGCATCAAATAATACTTTAG  
 TCGATCCTTAACAACAAGAGTACCTGTAACAAGTGTGGGTACGTAGTTTATTATGAAATC 1260  
 E L G I V V L M D I V H S H A S N N T L

Sac I

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 TACCTGACTTGTACAAACTGCCGTGGGTATCAACAATGAAAGTGAGACCTCGAGCACCAA 1320  
 D G L N M F D G T D S C Y F H S G A R G

ATCATTTGGATGTGGGATTCCTGGCTTTTAACTATGGAAACTGGGAGGTACTTAGGTATC  
 TAGTAACCTACACCCCTAAGGGCGGAAAAATTGATACCTTTGACCCCTCATGAATCCATAG 1380  
 K H W M W D S P L F N Y G N W E V L R Y

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 AAGAGAGTTTACGGCTCTACCAACCAACCTACTCAAGTTTAACTACCTAAATCTAAACTAC 1440  
 L L S N A P W A L D E F K F D G F R F D

GTGTGACATCAATGATGTATACTCACCACGGATTATCGGTGGGATTCACTGGGAACTACG  
 CACACTGTAGTTACTACATATGASTGGTGCCTAATAGCCACCCCTAAGTGACCCCTTGATGC  
 G V T S M M Y T H H G L S V G F T G N Y

Hinc II

AGGAATACCTTTGGACTGGCAACTGATGTGGATGCTGTGTGTGTATCTGATGCTGGTCAACG  
 TCCTTATGAAACCTGAGCGTTGACTACACCTACGACAACACATAGACTACGACCAGTTGC  
 E E Y F G L A T D V D A V V Y L M L Y N

ATCTTATTCATGGGCTTTTCCAGATGCAATTACCATTTGGTGAAGATGTTAGCGGAATGC  
 TAGAATAAGTACCCGAAAAAGGGTCTACGTTAATGGTAACCACTTCTACAATCGCCTTACG  
 C L I H G L F P D A I T I G E D V S G M

CGACATTTTGTATTCCCGTTCAAGATGGGGGGTGTGGCTTTGACTATCGGCTGCATATGG  
 GCTGTAAAACATAAGGGCAAGTTCTACCCCCACAACCGAAACTGATAGCCGACGTATAACC  
 P T F C I P V Q D G G V G F D Y R L H M

CAATTGCTGATAAAATGGATTGAGTTGCTCAAGAAAACGGGATGAGGATTGGAGAGTGGGTG  
 GTTAACGACTATTTACCTAACTCAACGAGTTCTTTGCCCTACTCCTAACCTCTCACCCAC  
 A I A D K W I E L L K K R D E D W R V G

ATATTGTTTCATACACTGACAAATAGAAGATGGTGGGAAAAGTGTGTTTCATACGCTGAAA  
 TATAACAAGTATGTGACTGTTTATCTTCTACCAGCCTTTTCACACAAAGTATGGGACTTT  
 D I V H T L T N R R W S E K C V S Y A E

GTCATGATCAAGCTCTAGTGGGTGATAAAACTATAGCATTCTGGCTGATGGACAAAGGATA  
 CAGTAAGTATCGAGATCAGCCACTATTTTGGATATCGTAAGACCGACTACCTGTTCTAT  
 S H D Q A L V G D K T I A F W L M D K D

TGATGATTTTATGGCTCTGGATAGACCGCCAAACATCATTAAATAGATCGTGGGATAGCAT  
 ACATACGAAATACCGAGACCTATCTGGCGGTGTAGTAATTATCTAGCACCCCTATCGTA  
 M V D F M A L D R P P T S L I D R G I A

Asp 718  
 Kpn I

TGGACAAAGATGATTAGGCTTTGTAACCTATGGGATTAGGACGAGGAAAGGTAACCTAAATTTG  
 AGGTGTTCTACTAATCCGAAACATTAACCCCTAATGCTCTCTCCCATGGATTTAAAGT  
 L H K M I P L V T M G L G G E G Y L N F

EcoRI

TGGGAAATGAATTGGGGCCACCCGTGAGTGGATTGATTTCCCTAGGGGCTGAACAACACCCCTCT  
 ACCCTTTACTTAAGCCCGGTGGGACTCACCCTAACTAAAGGGATCCCGACTTGTGTGGAGA 2040  
 M G N E F G F P E W I C F P R A E C - L  
 CTGATGACTCAGTAATTCCCGGGAACCAATTGAGTTATGATAAAATGCAGACGGAGATTTG  
 GACTACTGAGTCATTAAGGGCCCTTGGTTAAGTCAATACTATTTACGTCTGCCCTCTAAAC 2100  
 S D C S V I P G N C F S Y C K C R R R F

SspI

ACCTGGGAGATGCAGAAATATTTAAGATAACCGTGGGTGGCAAGAATTTGACCGGGGCTATGC  
 TGGACCCCTCTACGTCTTATAAATTCTATGGCACCCCAACGTTCTTAAACTGGCCCGATACG 2160  
 D L G D A E Y L R Y R G L Q E F D R A M  
 AGTATCTTGAAGATAAAATATGAGTTTATGACTTCAGAACACCAGTTTCATATCAGGAAAGG  
 TCATAGAACTTCTATTTTATACTCAAATACTGAAGTCTTGTGGTCAAGTATAGTGCCTTTCC 2220  
 Q Y L E D K Y E F M T S E H Q F I S R K  
 ATGAAGGAGATAGGATGATTGTATTTGAAAAAGGAAACCTAGTTTTTGTCTTTAATTTTC  
 TACTTCCTCTATCCTACTAACATAAACTTTTTCTTTGGATCAAAAAACAGAAATTAAAAG 2280  
 D E G D R M I V F E K G N L V F V F V F  
 ACTGGACAAAAAGCTATTCAGACTATCGCATAGGCTGCCTGAAGCCCTGGAAAAATACAAGG  
 TGACCTGTTTTTGATAAGTCTGATAGCGTATCCGACGGACTTCGGACCTTTTATGTTCC 2340  
 H W T K S Y S C Y R I G C L K P G K Y K  
 TTGCCCTTGGACTCAGATGATCCACTTTTTGGTGGCTTCGGGAGAAATGATCATAATGCCG  
 AACGGAAACCTGAGTCTACTAGGTGAAAAAACACCGAAGCCCTCTTAACTAGTATTACGGC 2400  
 V A L D S D C P L F G G F G R I C H N A

SspI

ATTATTTGACCTTTGAAGGATGGTATGATGATCGTCCCTCGTTCAATTATGGTGTATGGAC  
 TTATAAAGTGGAAACTTCCATCCATACTACTAGCAGGAGCAAGTTAATACCACTATCGTG 2460  
 E Y F T F E G W Y C D R P R S I M V Y A



Fig. 13

